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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,023	05/30/2001	Jin Hee Jung	049128-5009	5352

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EXAMINER

NGUYEN, HA T

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/867,023

Applicant(s)

JUNG, JIN HEE

Examiner

Ha T. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:

2) ☐ Certified copies of the priority documents have been received in Application No. _____.

3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Notice to applicant

1. Applicant's Amendment and Response to the Office Action mailed 2-24-03 has been entered and made of record (Paper No. 4).

Response to Amendment

- 1a. In view of Applicant's arguments, the objection to the specification has been withdrawn.

In view of Applicant's statement concerning the co-ownership of Zhong et al. (U.S. Patent 6365916) and the instant application, the rejections of claims 1-12 under 35 U.S.C. 103 as being unpatentable over Zhong et al. in combination with the references applied in Paper No. 3, have been withdrawn.

Applicant's arguments with regard to the rejections under 35 U.S.C. 103 have been fully considered, but they are not deemed to be persuasive. The response to these arguments will be incorporated in the new ground of rejection given below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhong et al. (U.S. Patent 5994721, hereinafter "Zhong") in view of Narita et al. (U.S. Patent 5555114, hereinafter "Narita") or Itou et al. (JP 08297280, hereinafter "Itou").

[Claims 1 and 8] Referring to Figs. 4, 5 and related text, when looking from the front toward the back of the device shown in Fig. 5 (flipping the Fig. 5, upside down) Zhong discloses a reflective liquid crystal display device comprising: a first substrate 51; a retardation film disposed on the first substrate; a polarizing plate 53 disposed on the retardation film (see col. 14,

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lines 39-44); a transparent electrode 49 formed on the lower side of the first substrate; a second substrate 19; thin film elements formed on the second substrate (see Fig. 4); color filters 101 formed on the thin film elements; a pixel electrode 3 formed on each of the color filters, wherein the pixel electrode corresponds to a respective one of the color filter; and a liquid crystal layer 45 is located between the first substrate and the second substrate. But Zhong does not disclose expressly wherein the color filters include a cholestric liquid crystal. However, the missing limitation is well known in the art because Narita or Itou discloses this feature (See Narita abstract or Itou, Constitution). A person of ordinary skill is motivated to modify Zhong with Narita or Itou to obtain better, sharper image due to the selective characteristic of the CLC. Note that Zhong's objective is to improve high aperture AMLCD design, there is no requirement for a LCD with backlighting, backlighting is one of the major technique used in LCD display, it may have some imperfections but it is still widely used in applications where appropriate. Even though Narita does point out some of the limitations of backlighting technique, this does not mean that color filters having cholestric liquid crystal cannot be used in LCD with backlighting, on the contrary because of the improvement in clarity cholestric liquid crystal provides, it is more beneficial to use color filters having cholestric liquid crystal in LCD with backlighting.

[Claim 2] Zhong also discloses an absorbing layer 41 disposed on the second substrate (see Fig. 3), depending on the arrangement of the device, the absorbing layer is disposed on the lower or upper side of the substrate;

[Claims 3 and 10-12] wherein thin film elements include a TFT as switching device having an electrode 31, and the pixel electrode 3 is connected to the electrode of the switching device through a contact hole 25 (see Fig. 4).

[Claims 4 and 5] Narita also discloses the phase difference value of the retardation film is $\lambda/4$; and wherein the phase difference value in the liquid crystal is $\lambda/2$ (see col. 8, lines 51); and

[Claim 6] further comprising a first alignment layer 47 disposed between the first substrate 51 and liquid crystal layer 45; and a second alignment layer 43 disposed between the second substrate 19 and liquid crystal layer 45.

Therefore, it would have been obvious to combine Zhong with Narita or Itou to obtain the invention as specified in claims 1-6, 8, and 10-12.

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4. Claims 7, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhong in view of Narita or Itou, as applied to claims 1-6, 8, and 10-12 above, and further in view of Kadota et al. (U.S. Patent 5818550, hereinafter "Kadota").

The combined teaching of Zhong and Narita or Itou discloses the limitations of claims 7, 9, and 13, as shown above. It also discloses the pixel electrode 3 is connected to the electrode of the switching device through a contact hole 35 (see Zhong, Fig. 4).

But it does not disclose expressly that an insulating film is between the color filters and the pixel electrode .

However, the missing limitation is well known in the art because Kadota discloses this feature (See fig. 1, # 10).

A person of ordinary skill is motivated to modify Zhong and Narita or Itou with Kadota to obtain device with better reliability and integrity resulting from better isolation of the different components.


Therefore, it would have been obvious to combine Zhong and Narita or Itou with Kadota to obtain the invention as specified in claims 7, 9, and 13.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ha Nguyen whose telephone number is (703)308-2706 . The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM, except the first Friday of each bi-week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached on (703) 308-3325. The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding


Ha Nguyen
Primary Examiner
6-24 - 03